QUESTIONS AND ANSWERS.
Miscellaneous.

WELL CURB AND FILTER.

I thought of digging a well 8 x 12. Which would be cheaper, to wall it up, stone or cement? I want to run water off barn into it. I want to use it to drink. Can you tell me how to make a filter? J. W. C.

Ans.—In this case the cement would likely prove most satisfactory, although, if plentiful, stone would be cheaper. With regard to a filter, we reprint an answer given by Prof. J. B. Reynolds, of Guelph, to a similar question asked some time ago.

The necessity for filtering water, and the method by which it is to be accomplished, depend upon the character of the substances held in suspension or solution by the water. The first to be mentioned are mineral sediments, consisting of gravelly pebbles, disintregated rock and sand. It is not likely that there would be any of this to be filtered from the water in this instance. In any event, a condition of separation of mineral substances is, generally, quietude for a short time, during which the substances will settle to the bottom. Other mineral impurities consist of fine silt and clay, so fine that the process of separation by gravity is very slow. The filter about to be described below will generally remove substances of this character. Next are the organic impurities, consisting of decaying leaves and other vegetable matter. These have so nearly the same specific gravity as water that the process of separation by gravity cannot be waited for, and, besides, these substances, being partially soluble, leave the water tainted even after their solid parts have been removed.

It must be borne in mind that the finest filters, acting mechanically, can remove only solid impurities. Impurities that have passed into solution yield only to chemical treatment. If the water be strongly impregnated with vegetable solutions, it would be wise to let it alone and seek a supply from some other source for table use. In this instance, the rain-water falling upon a roof, unless it is situated close to a factory, is not likely to have anything objectionable contained in it that cannot be removed by mechanical filter.

A filter of this sort should consist of a basin or tank containing about four square feet of surface; that is, if square, should be two square feet; and should be seven to eight feet in depth; the filter so placed that the top of it is as nearly as possible level with the top of tank which supplies it. As to the material of the filter, it should consist, from the bottom upward, of first, a drain pipe, having joints or perforations for receiving the water; second, one foot of coarse gravel; third, one foot of fine gravel; then from one to two feet of medium sand. Care should be taken to have the material of these layers of uniform grade. Each grade should be sifted, and the finer, as well as the coarser grades removed. Any want of uniformity in the size of the particles composing each layer will interfere seriously with their permeability. In order to furnish a sufficient head to force the water through the filter, there should be a depth of about three feet of water above the filter.

If there is much solid material in suspension in the water, it will be caught in the top layer of the filter, and will gradually clog the filter. The top layer should, therefore, be occasionally examined and renewed when required by scraping off until clean sand is reached, and replacing to the required depth with fresh sand.

GOSSIP.

Official records of 261 Holstein-Friesian cows were accepted by the American Holstein Association, from May 29th to June 4th, 1912. This herd of 261 animals, of which fully one-half were heifers with first or second calves, produced in seven consecutive days, 109,599.3 lbs. of milk containing 3,924.472 lbs. of butter-fat; thus showing an average of 3.58 per cent. fat. The average production for each animal was 419.9 lbs. of milk containing 15.036 lbs. of butter-fat; equivalent to over 59.98 lbs. or 28.56 quarts of milk per day, and 17.54 lbs. of the best commercial butter per week.